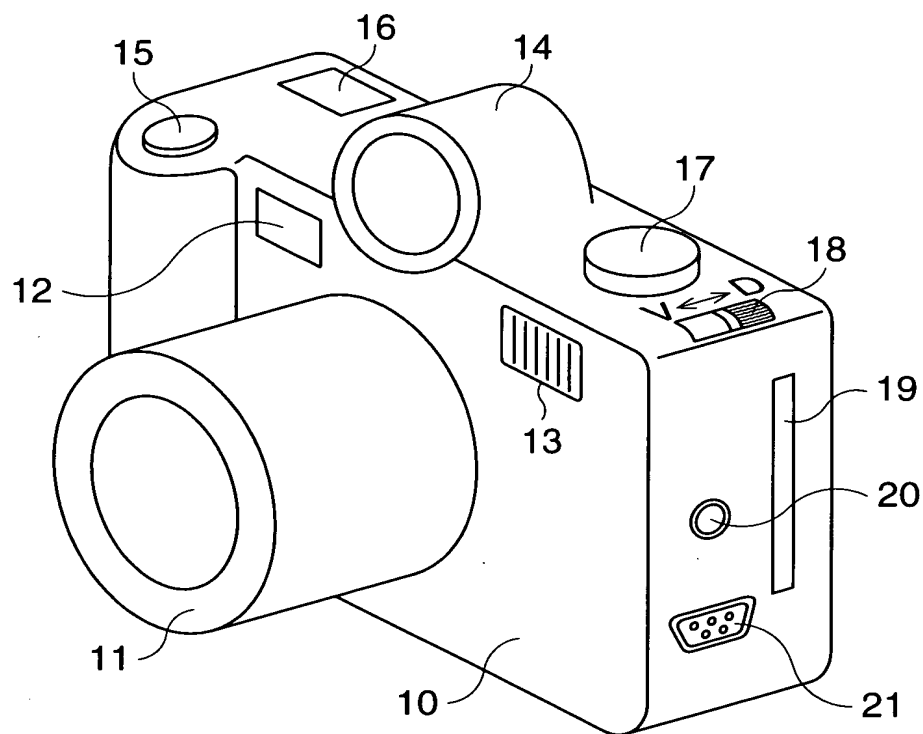


FIG. 1



000090" 19063500

FIG. 2

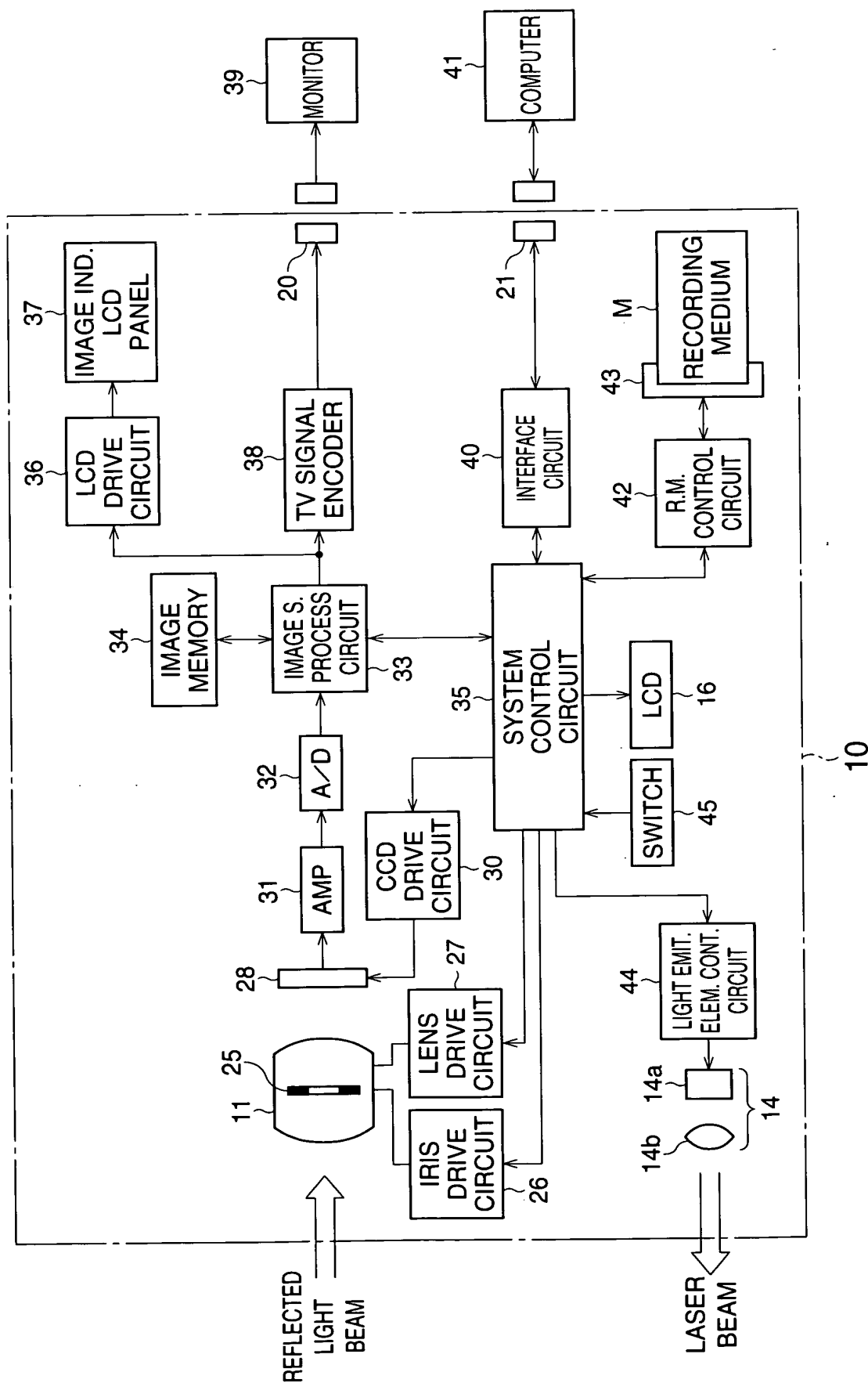


FIG. 3

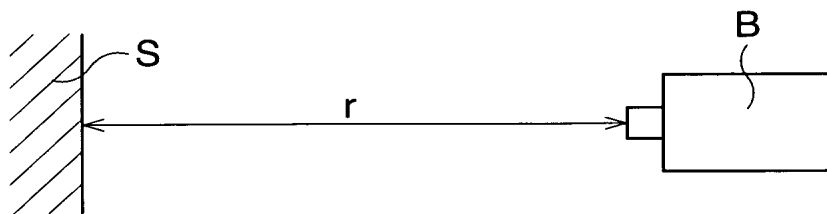


FIG. 4

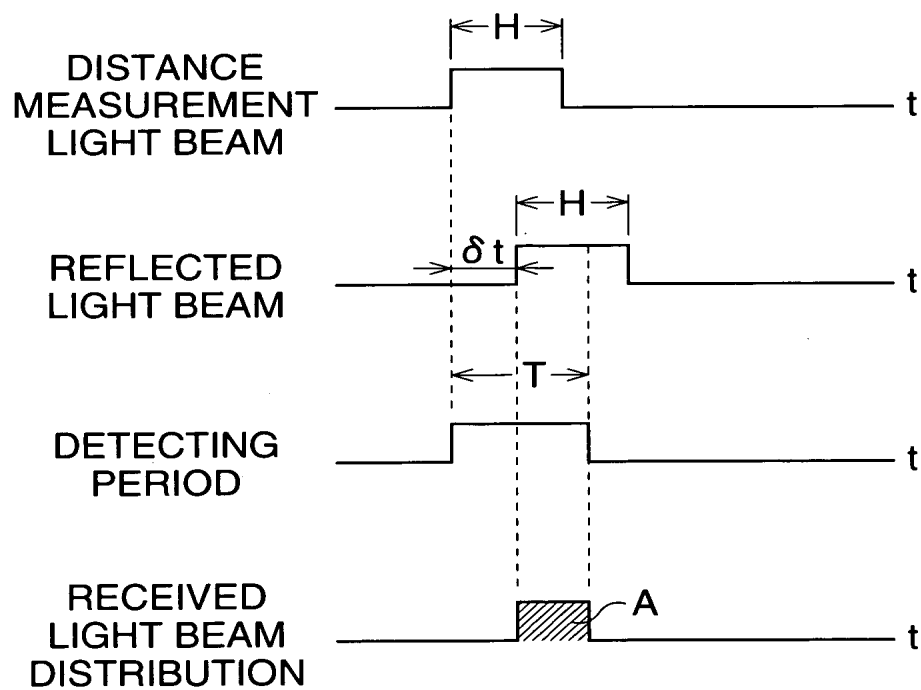
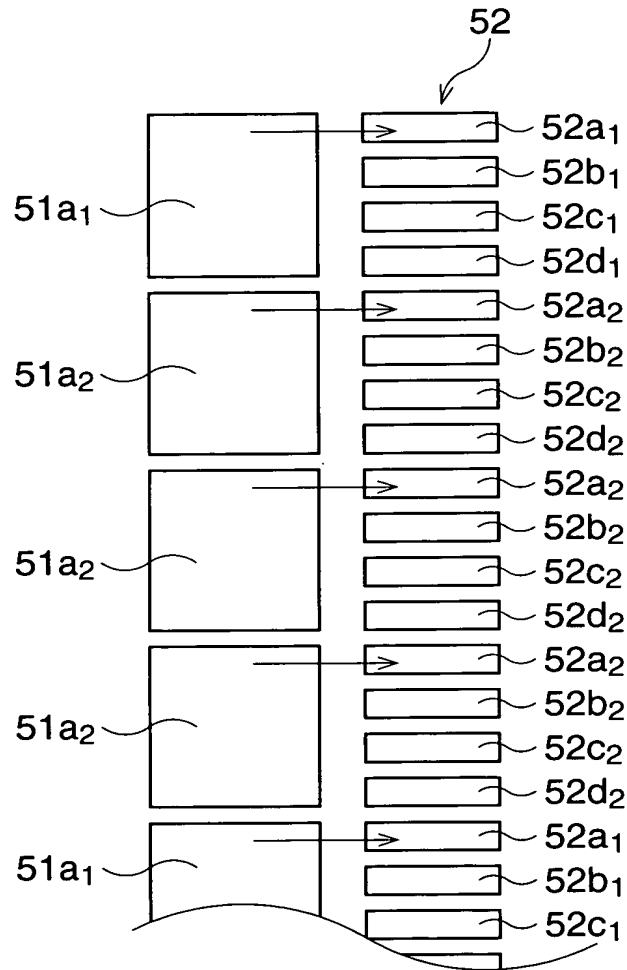
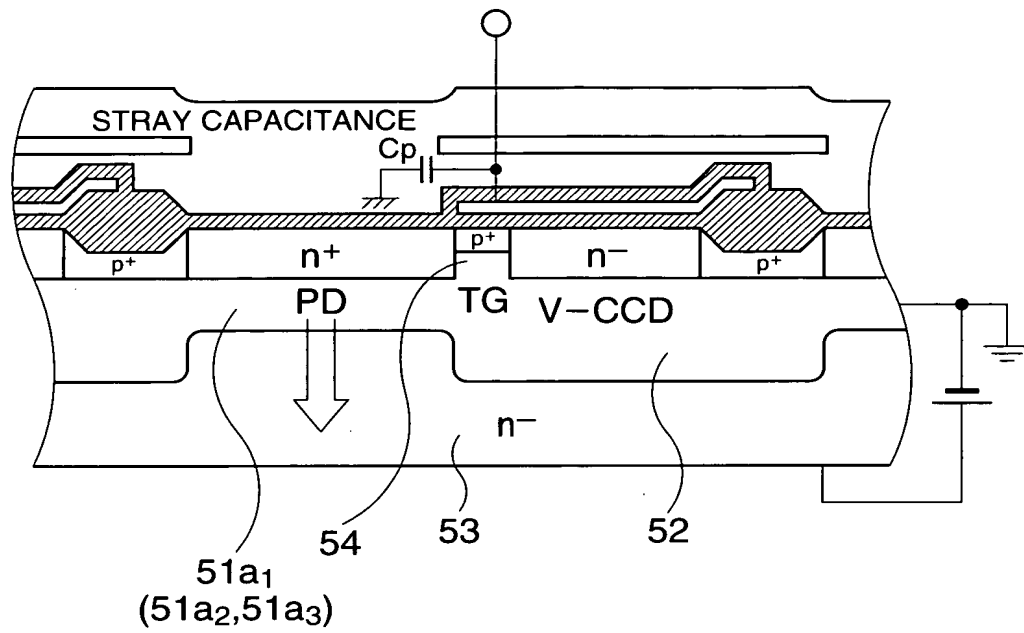


FIG. 5



5 / 23
FIG. 6



000000-19000560

FIG. 7

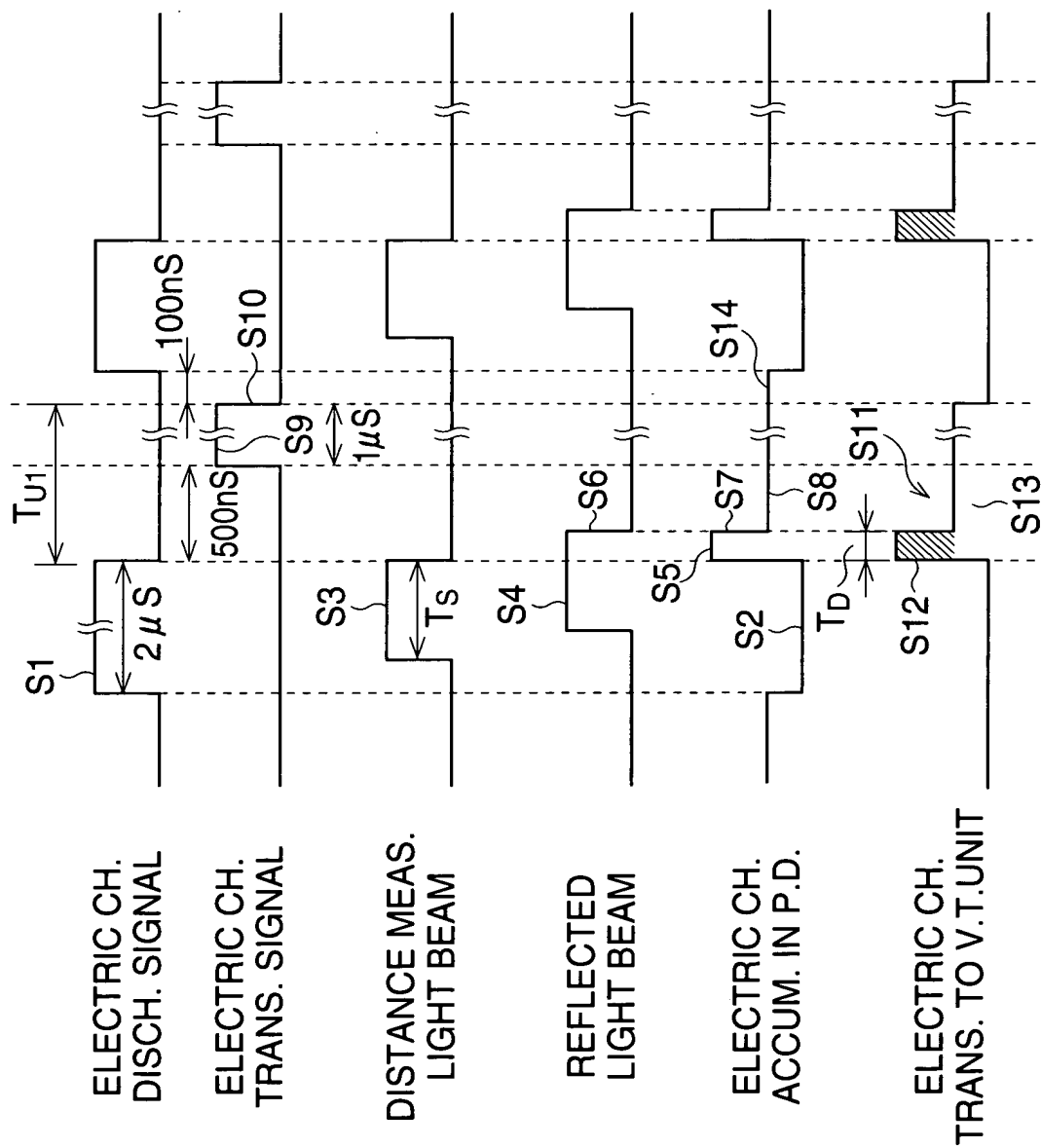
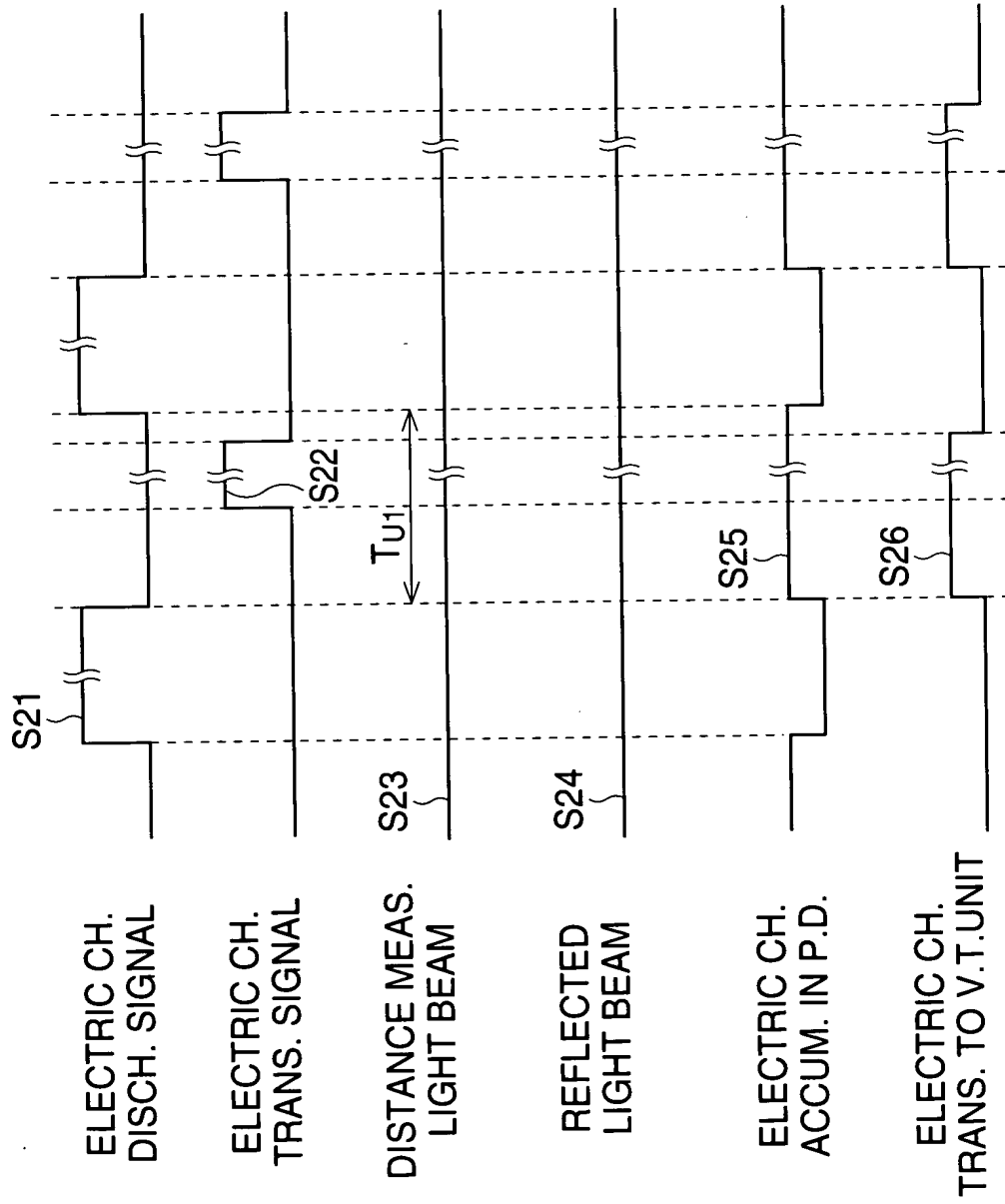


FIG. 8



The timing diagram illustrates the sequence of events in a distance measurement system. The waveforms are as follows:

- ELECTRIC CH. DISCH. SIGNAL:** A pulse with a width of $2\ \mu\text{S}$ (labeled S31).
- ELECTRIC CH. TRANS. SIGNAL:** A pulse that starts after the discharge signal, with a width of $500\ \text{nS}$ (labeled S35). The total time from the start of the discharge signal to the end of this pulse is $1\ \mu\text{S}$.
- DISTANCE MEAS. LIGHT BEAM:** A pulse that starts after the trans. signal, with a width of $200\ \text{nS}$ (labeled S33). The time from the start of the trans. signal to the end of this pulse is T_{u2} . The time from the start of the discharge signal to the end of this pulse is T_s .
- REFLECTED LIGHT BEAM:** A pulse that starts after the distance measurement beam, with a width of $200\ \text{nS}$ (labeled S34).
- ELECTRIC CH. ACCUM. IN P.D.:** A pulse that starts after the reflected beam, with a width of $200\ \text{nS}$ (labeled S32). The time from the start of the reflected beam to the end of this pulse is $S36$.
- ELECTRIC CH. TRANS. TO V.T. UNIT:** A pulse that starts after the accumulation signal, with a width of $200\ \text{nS}$ (labeled S'39). The time from the start of the accumulation signal to the end of this pulse is $S39$.

Additional time intervals and labels include $100\ \text{nS}$ (labeled S37), $1\ \mu\text{S}$ (labeled S38), and $100\ \text{nS}$ (labeled S39).

ELECTRIC CH.
TRANS. TO V.T.UNIT

FIG. 10

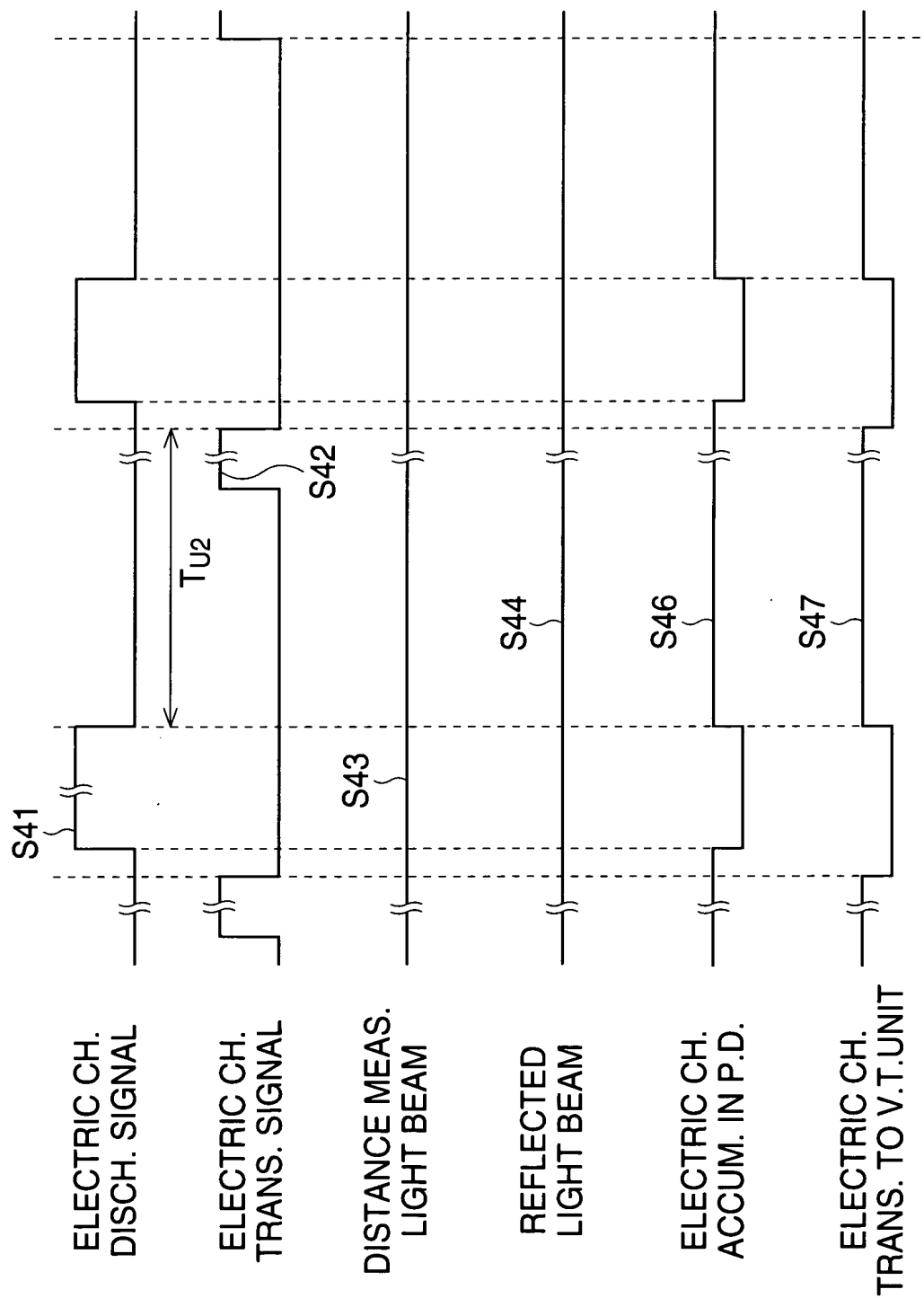
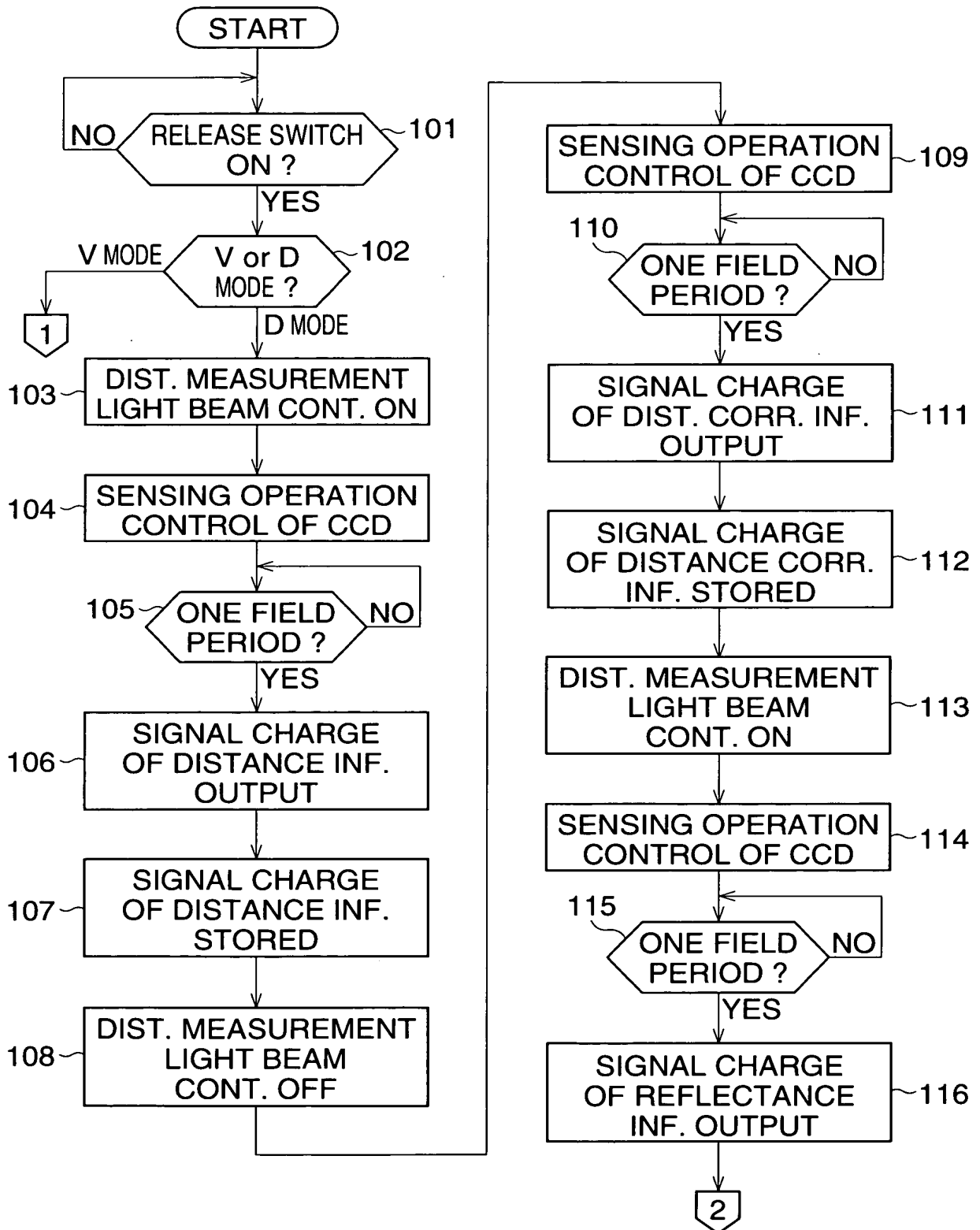
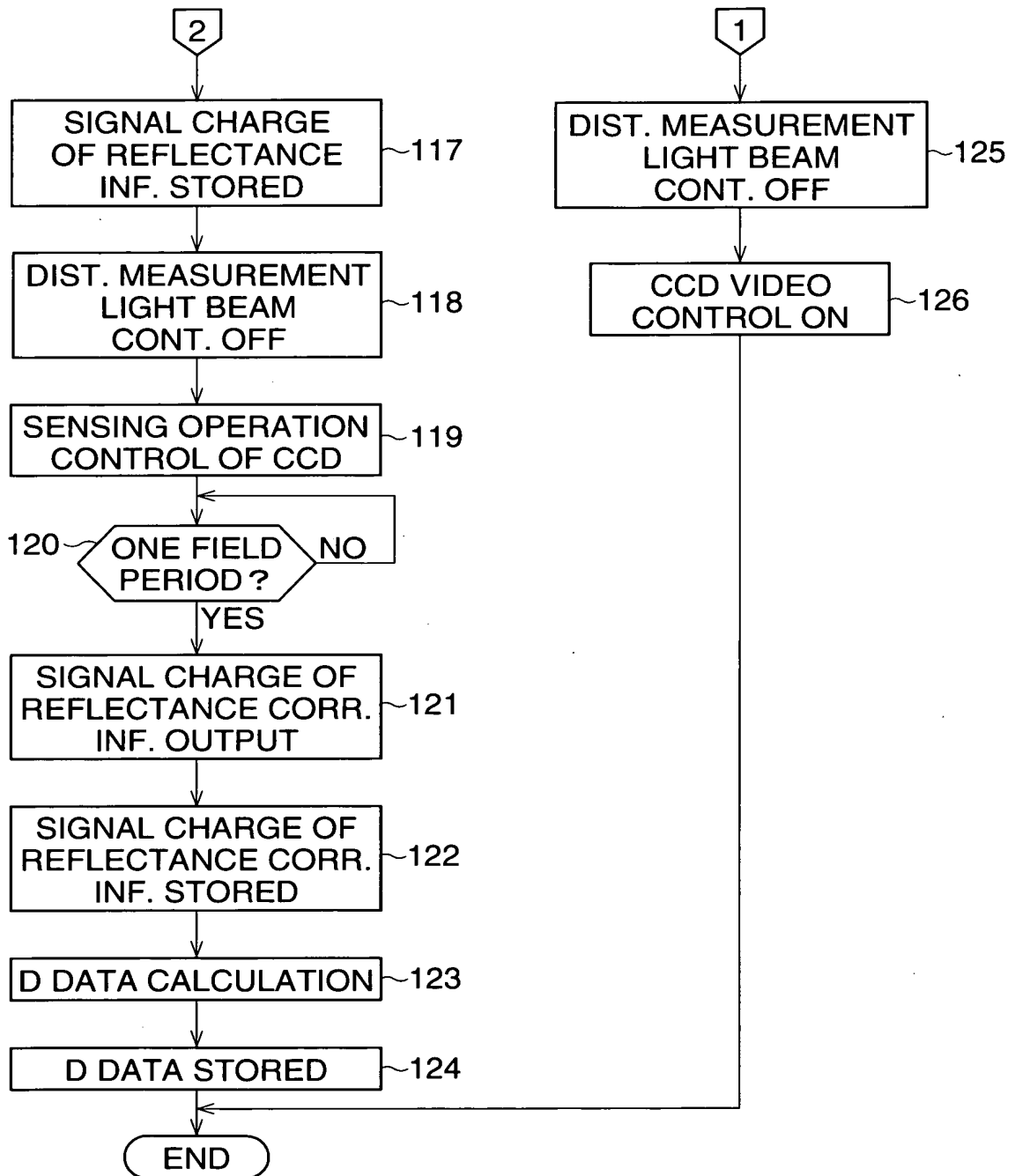


FIG. 11A



11/23
FIG. 11B



000001900500

FIG. 12

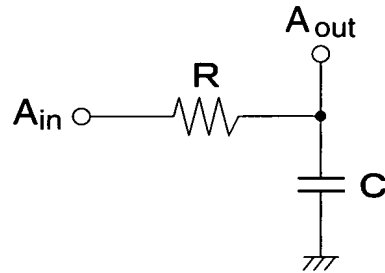


FIG. 13

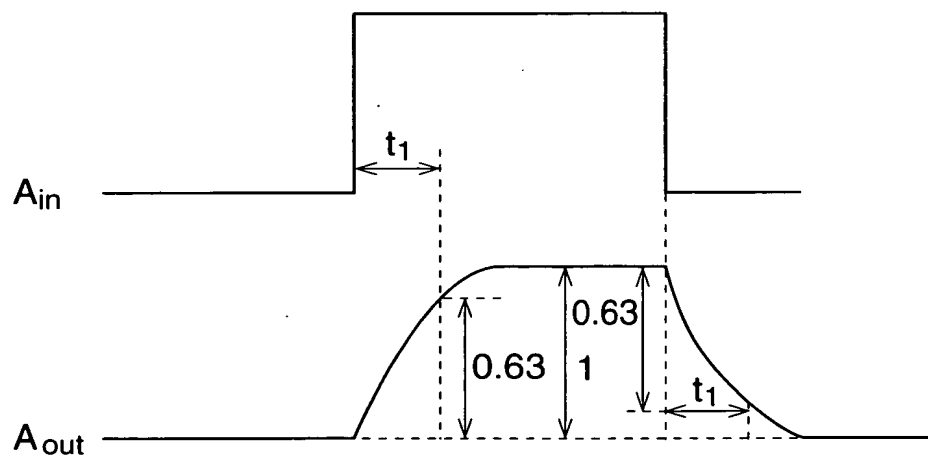


FIG. 14

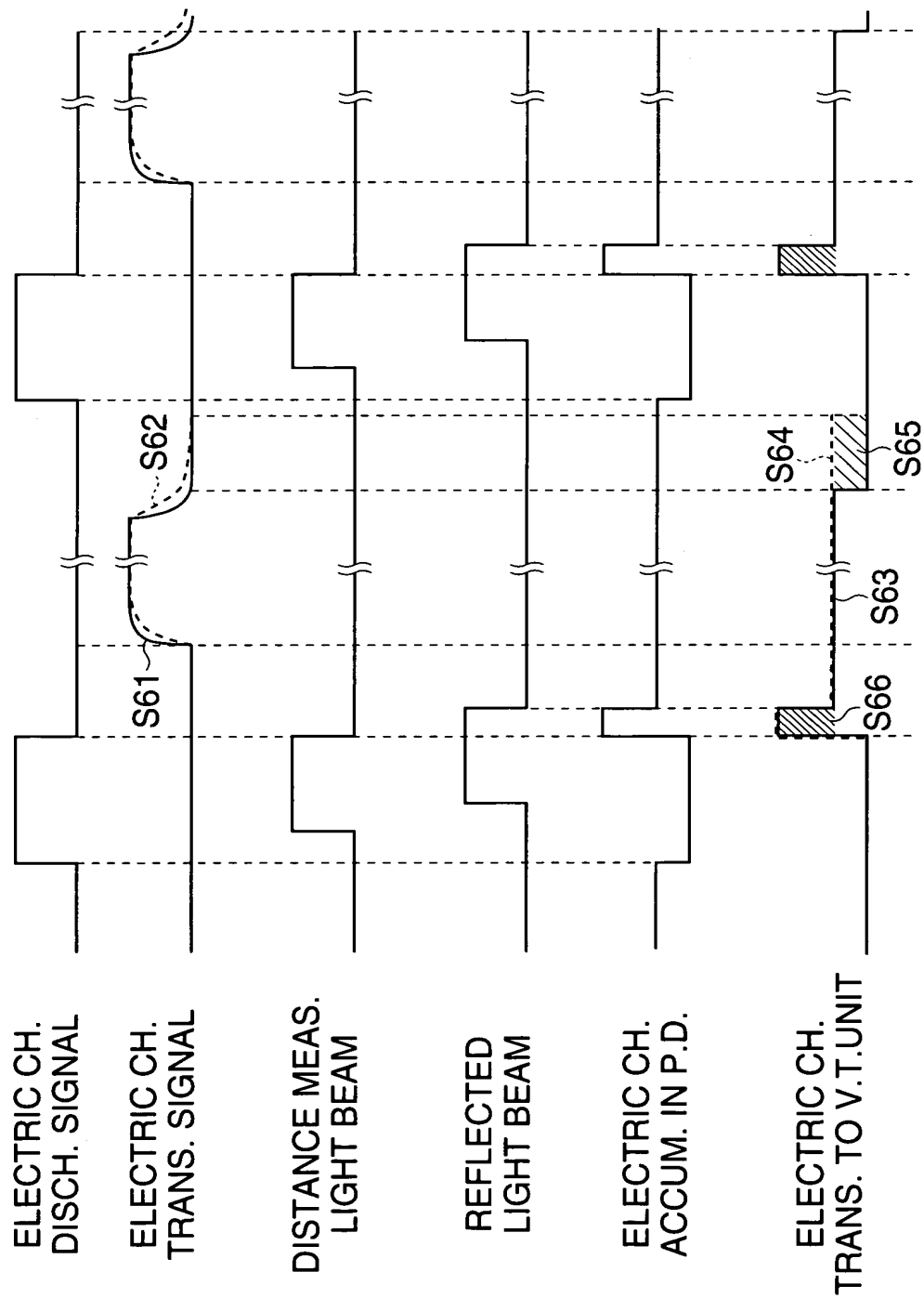
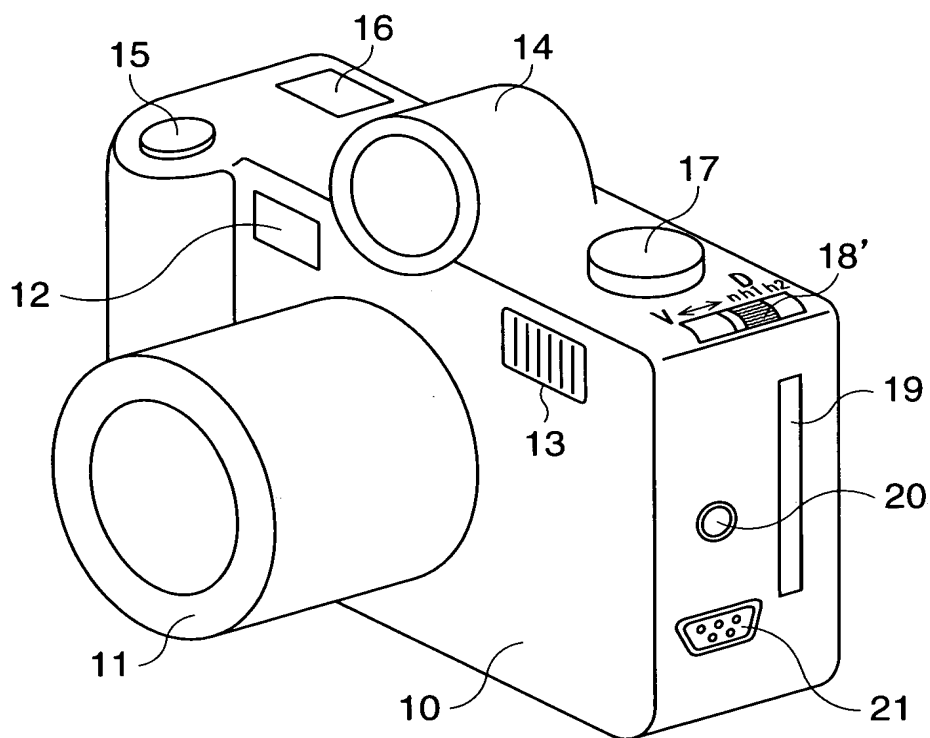
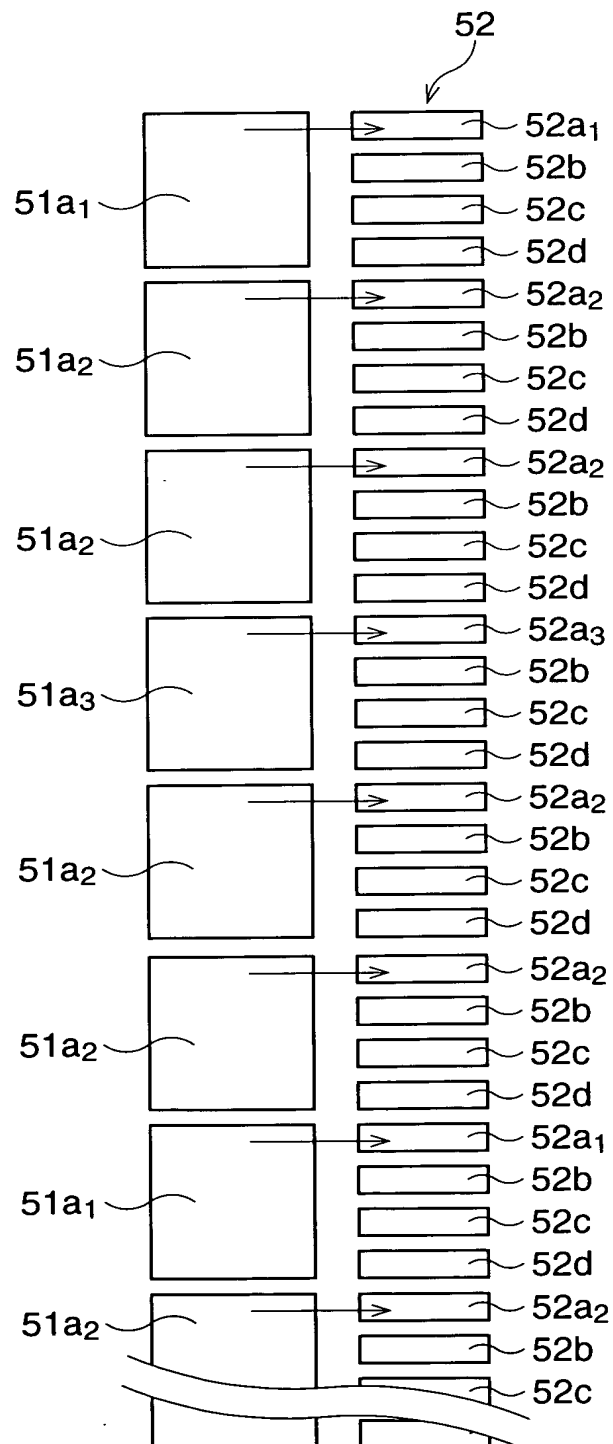


FIG. 15



THE UNIVERSITY OF CHICAGO



16/23
FIG. 17A

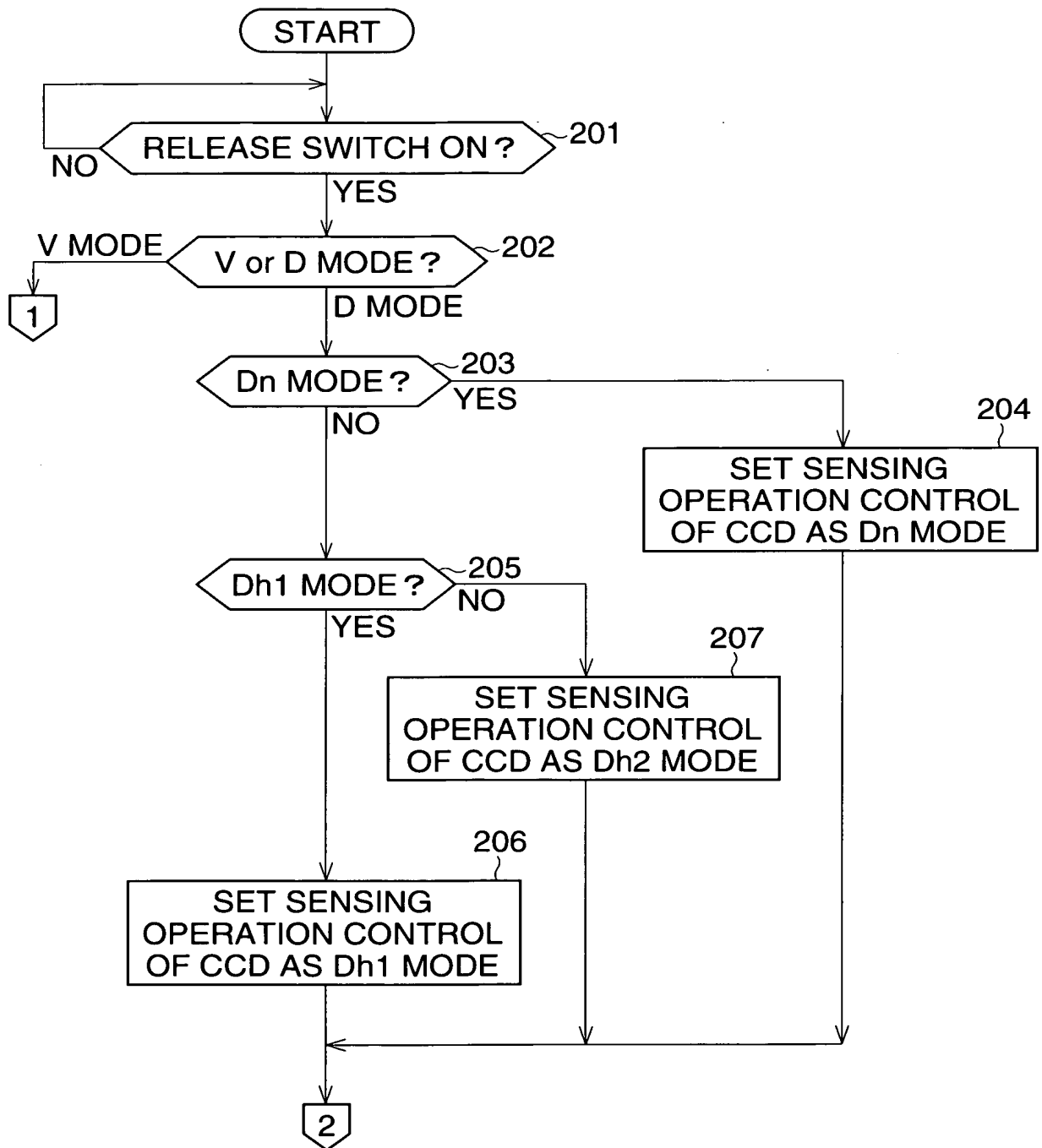
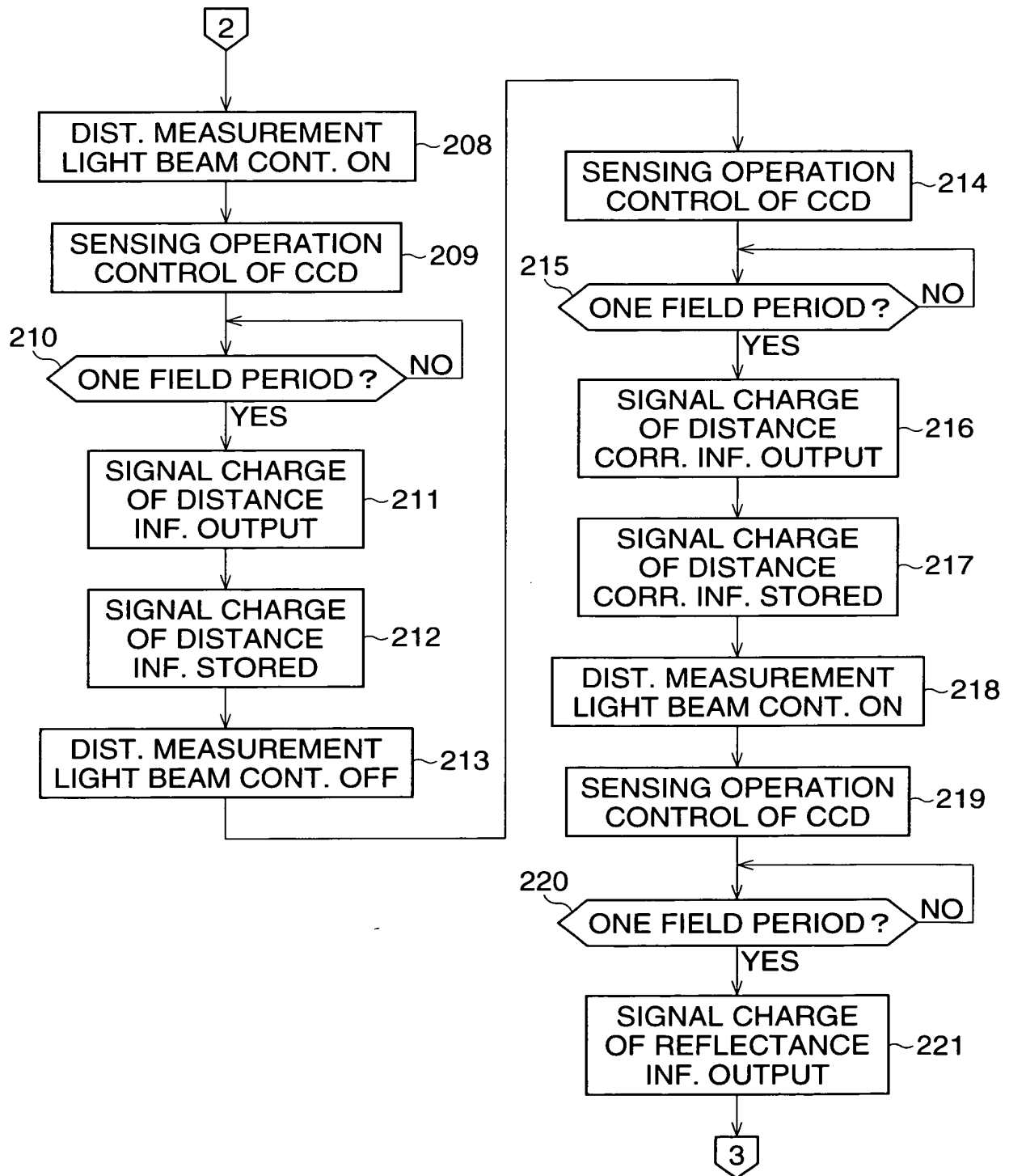


FIG. 17B



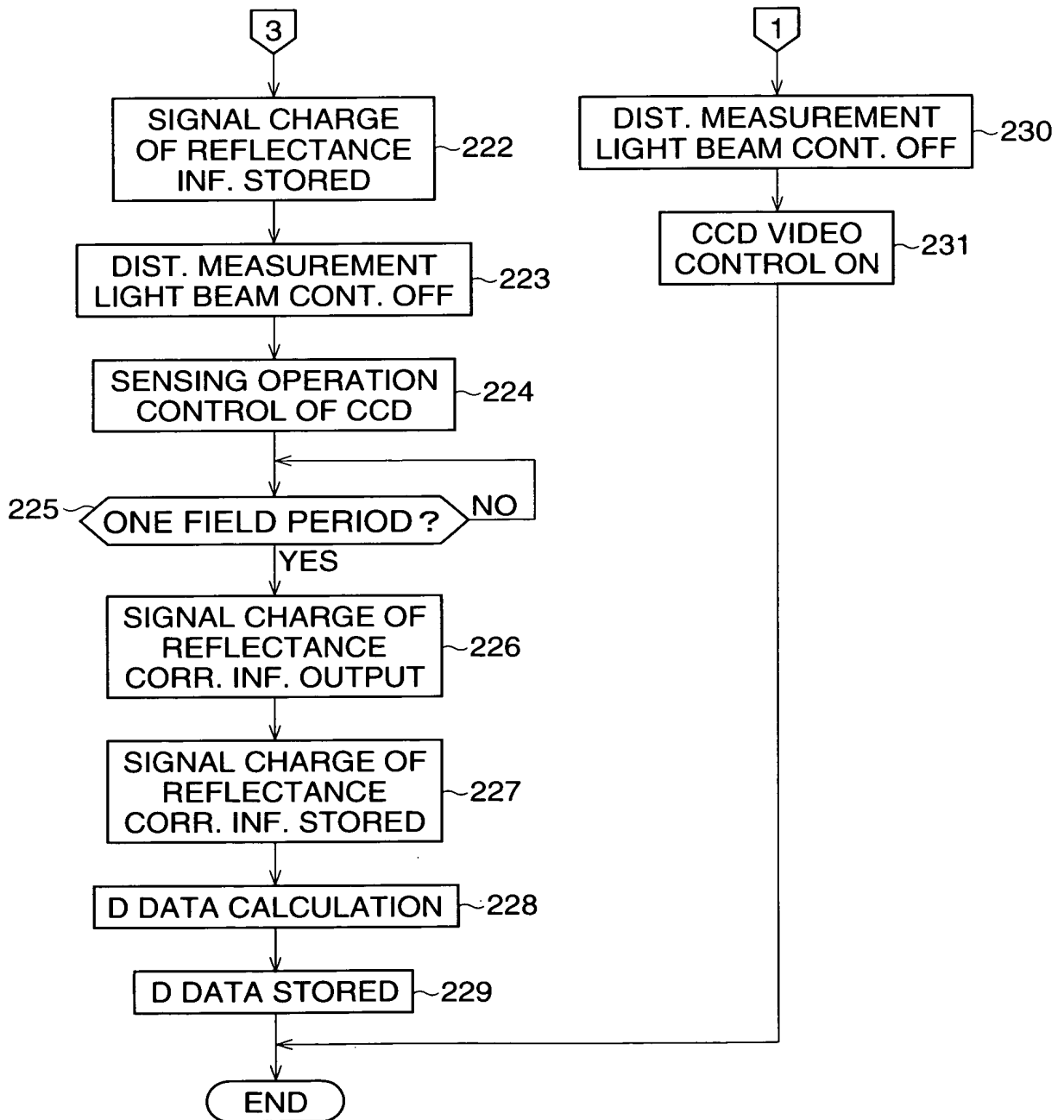
[illegible]

FIG. 18

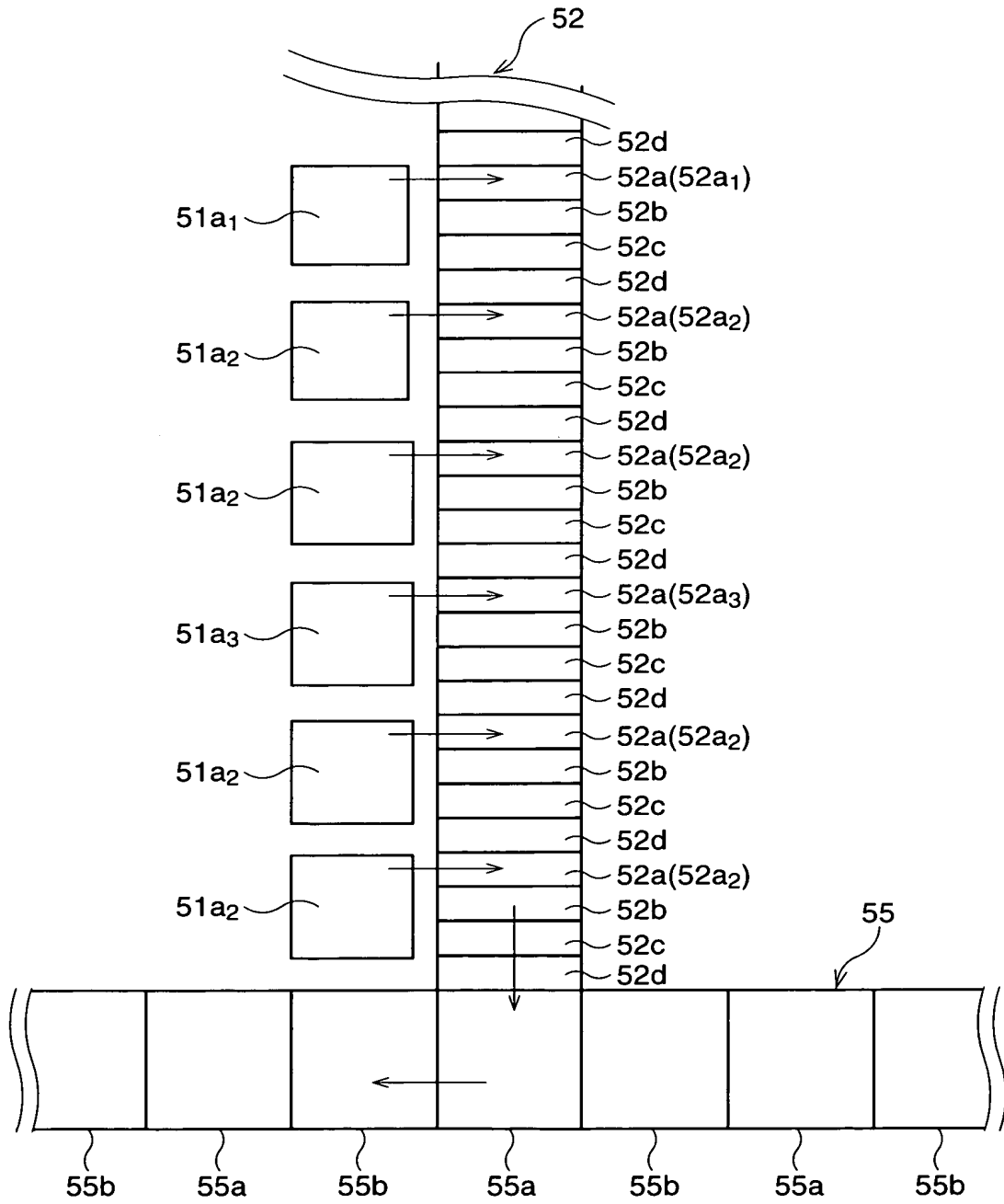


FIG. 19A

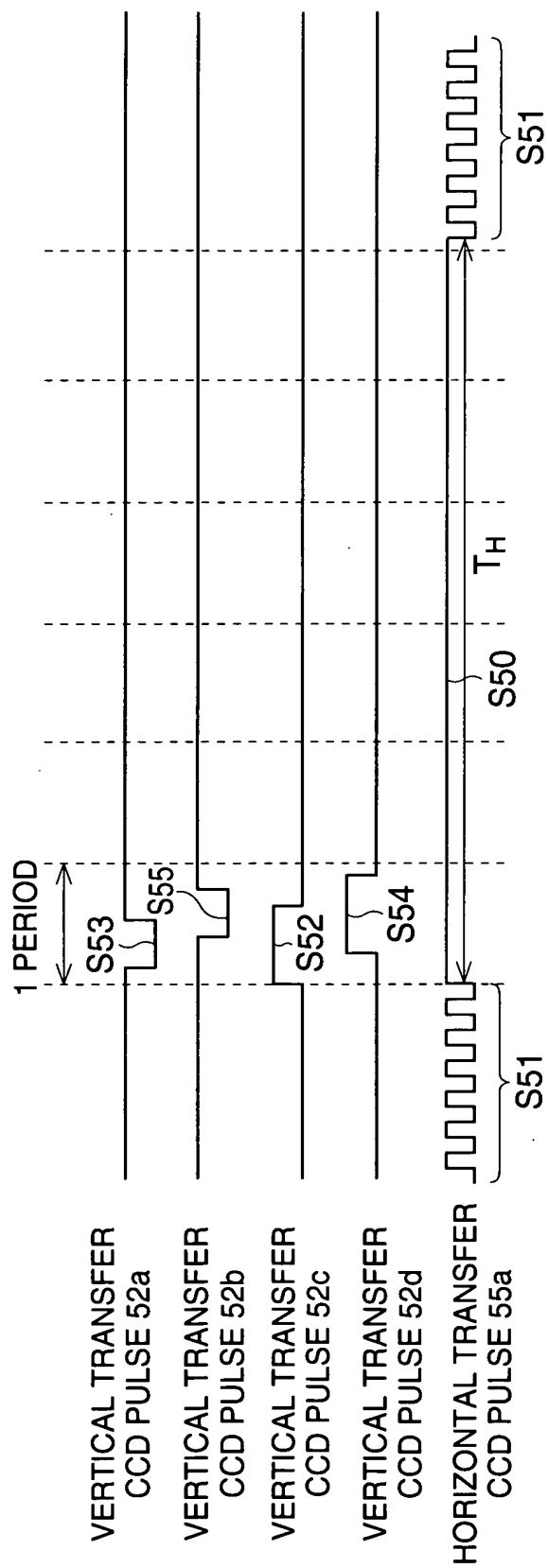


FIG. 19B

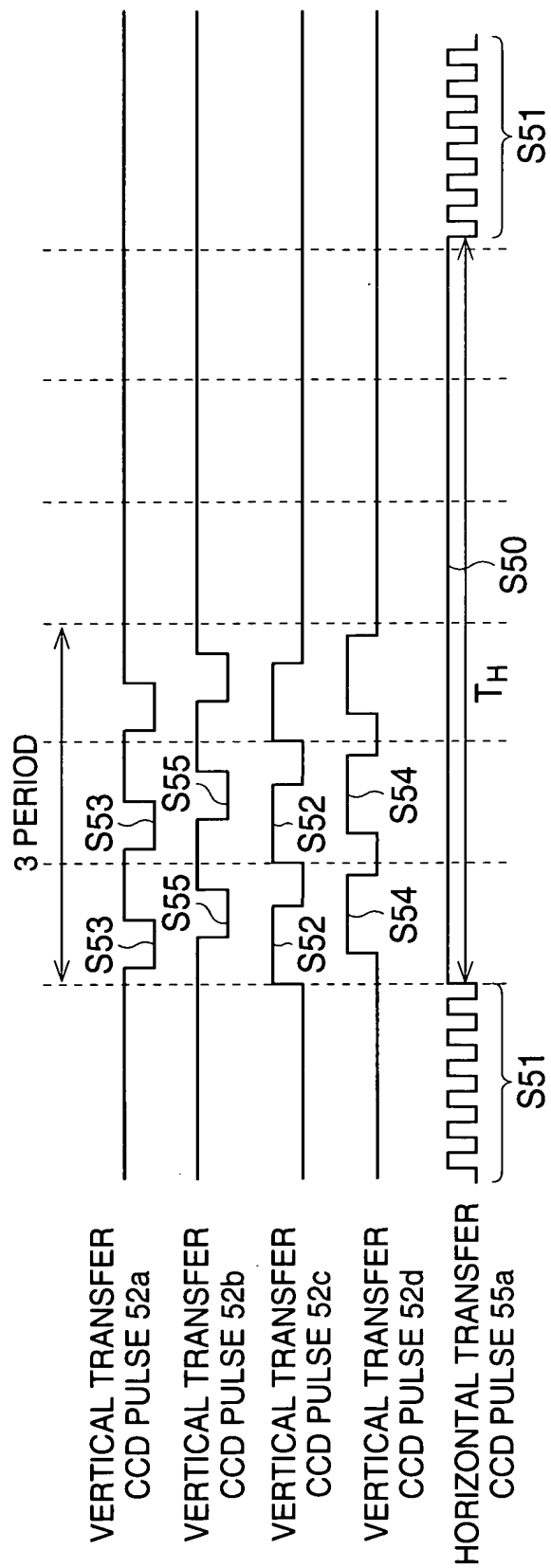


FIG. 19C

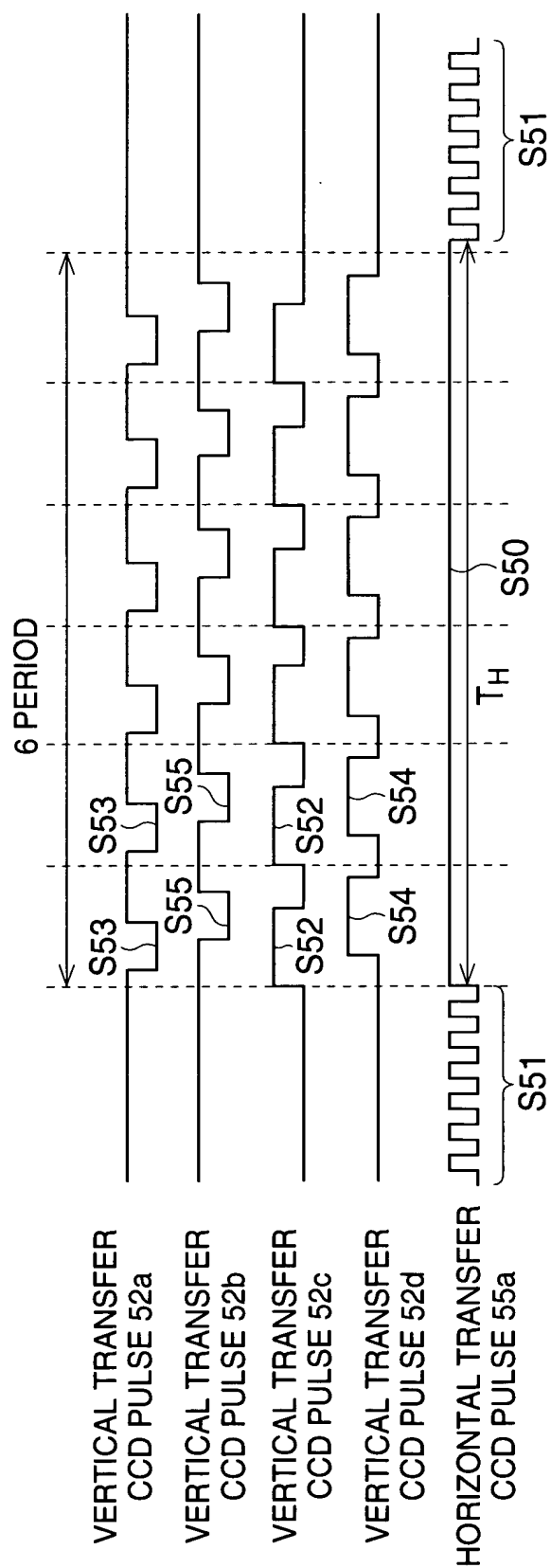


FIG. 20

